

# 2SH27

Silicon N Channel IGBT  
High Speed Power Switching

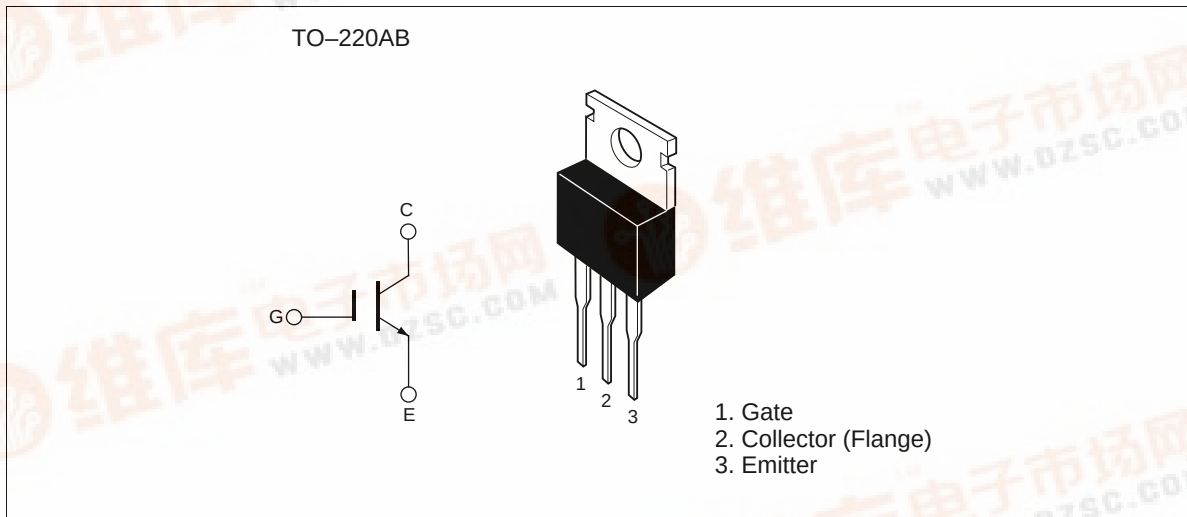
# HITACHI

ADE-208-789A(Z)  
2nd. Edition  
May 1999

## Features

- High speed switching
- Low on-voltage

## Outline



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## 2SH27

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### Absolute Maximum Ratings (Ta = 25°C)

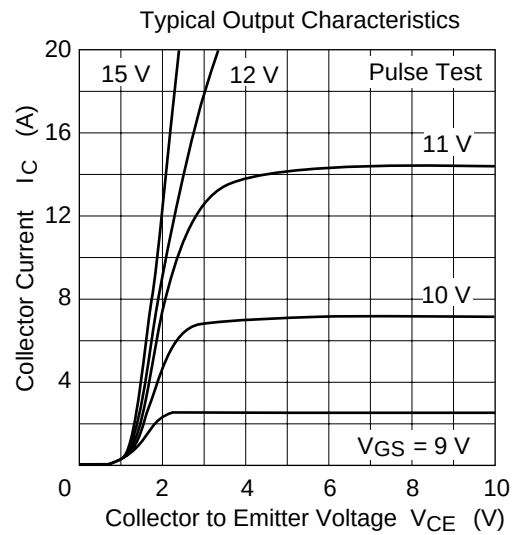
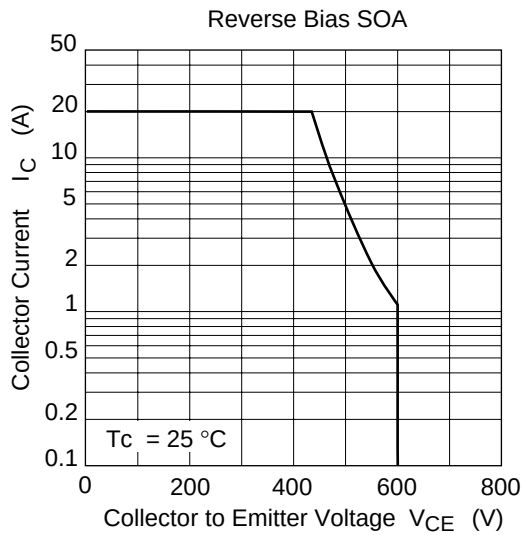
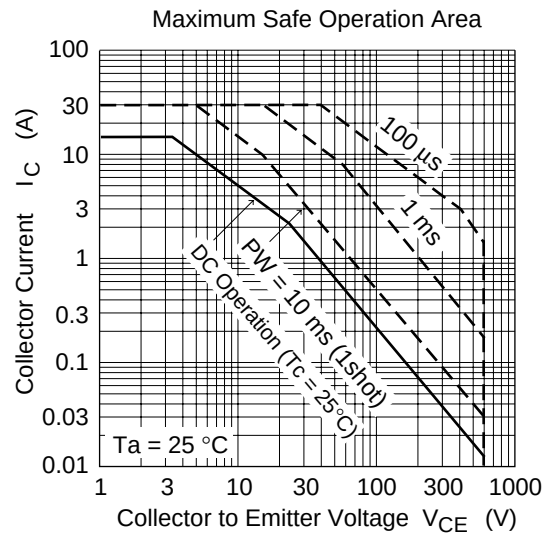
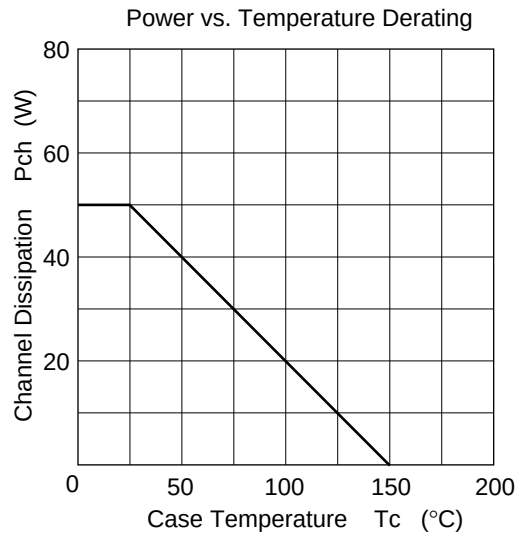
| Item                         | Symbol                 | Ratings     | Unit |
|------------------------------|------------------------|-------------|------|
| Collector to Emitter voltage | $V_{CES}$              | 600         | V    |
| Gate to Emitter voltage      | $V_{GES}$              | ±20         | V    |
| Collector current            | $I_C$                  | 15          | A    |
| Collector peak current       | $i_{c(peak)}$          | 30          | A    |
| Collector dissipation        | $P_C$ <sup>Note1</sup> | 50          | W    |
| Channel temperature          | Tj                     | 150         | °C   |
| Storage temperature          | Tstg                   | −55 to +150 | °C   |

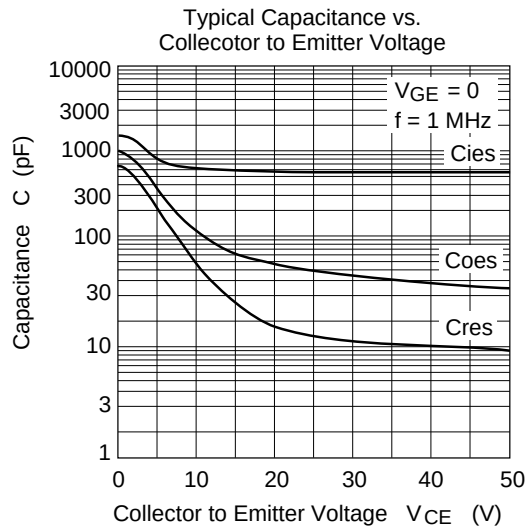
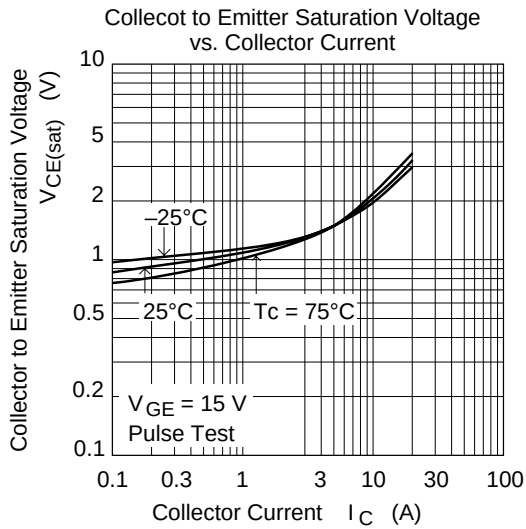
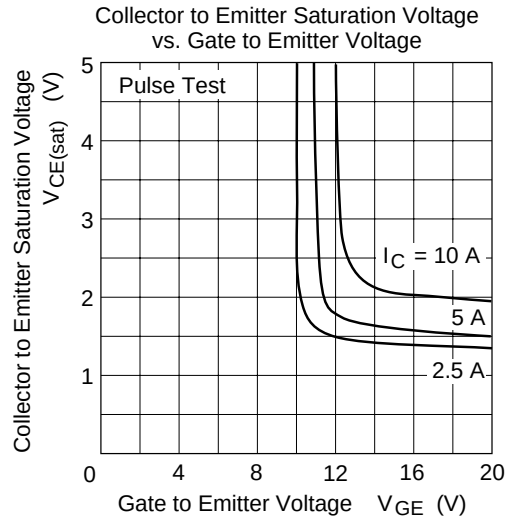
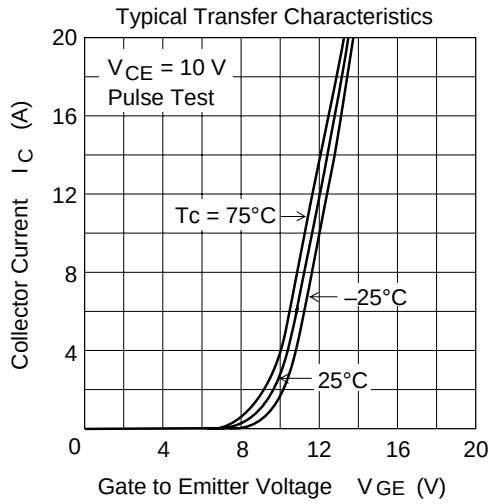
Note: 1. Value at Tc = 25°C

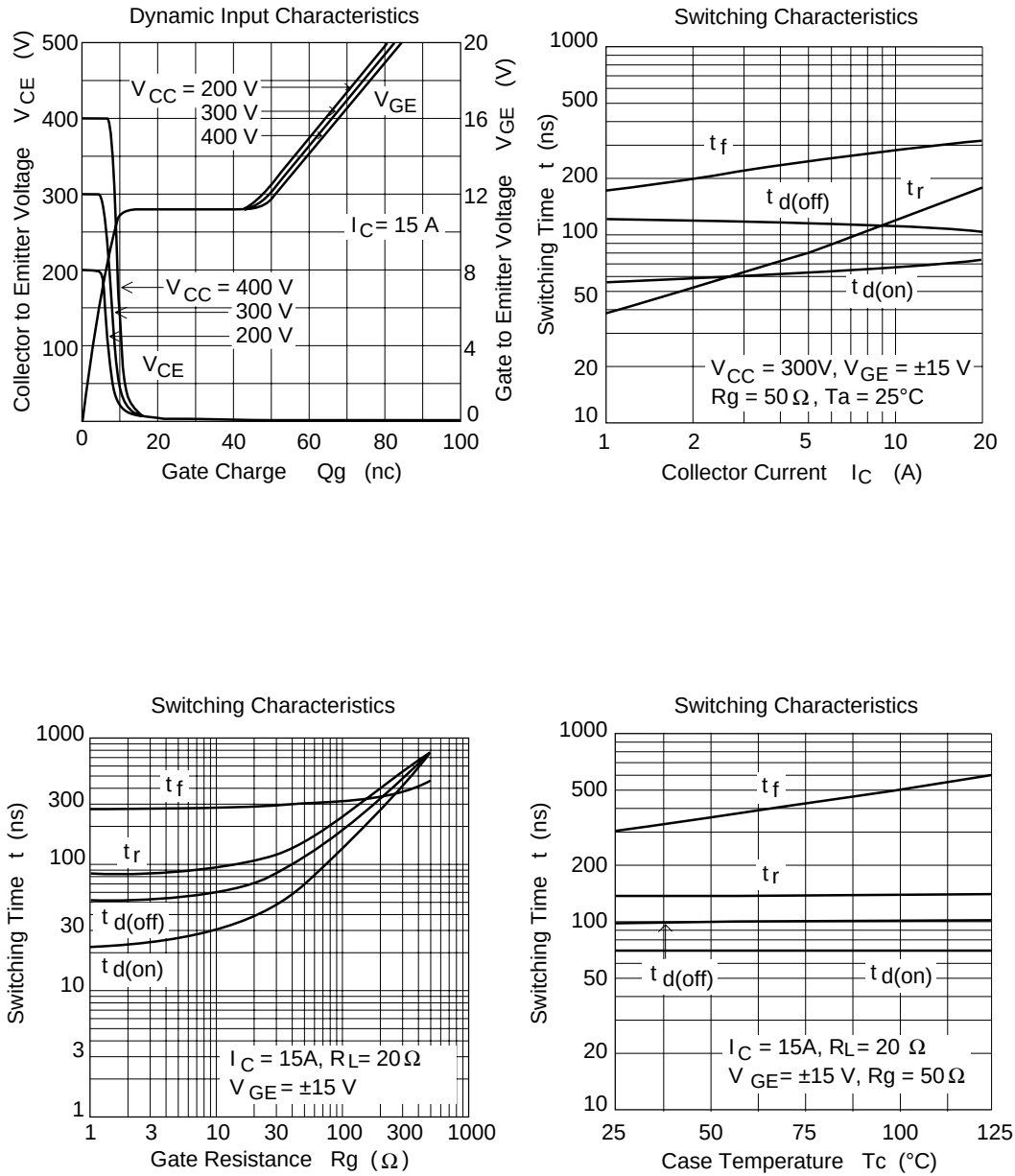
### Electrical Characteristics (Ta = 25°C)

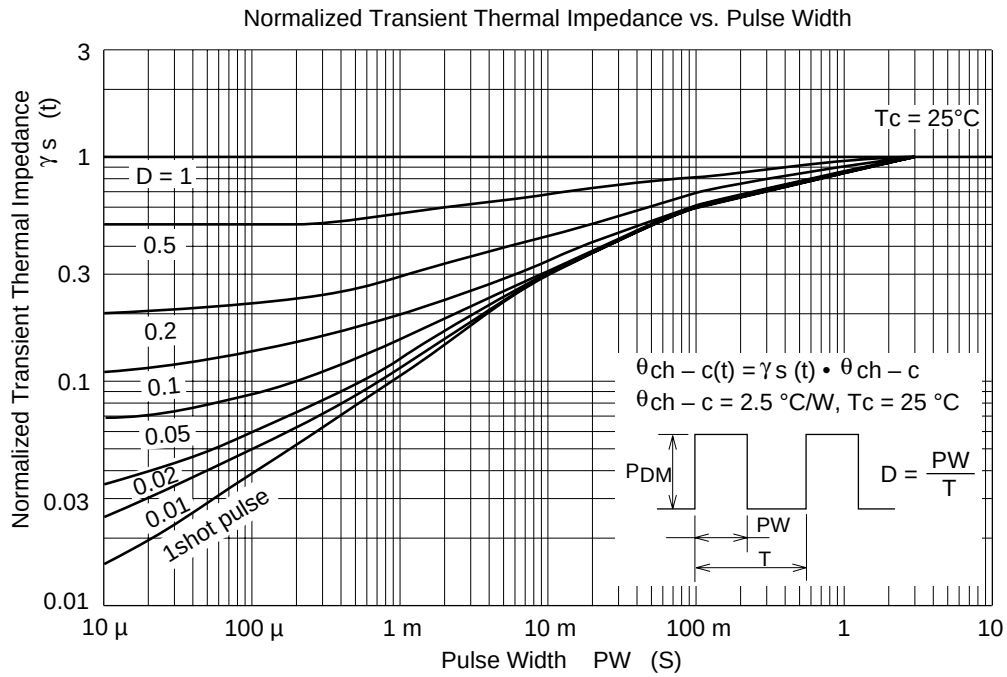
| Item                                    | Symbol        | Min | Typ | Max | Unit | Test Conditions                          |
|-----------------------------------------|---------------|-----|-----|-----|------|------------------------------------------|
| Zero gate voltage collector current     | $I_{CES}$     | —   | —   | 100 | μA   | $V_{CE} = 600V, V_{GE} = 0$              |
| Gate to emitter leak current            | $I_{GES}$     | —   | —   | ±1  | μA   | $V_{GE} = \pm 20 V, V_{CE} = 0$          |
| Gate to emitter cutoff voltage          | $V_{GE(off)}$ | 6.0 | —   | 8.0 | V    | $I_C = 15mA, V_{CE} = 10V$               |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | —   | 2.1 | 2.6 | V    | $I_C = 15A, V_{GE} = 15V$                |
| Input capacitance                       | Cies          | —   | 920 | —   | pF   | $V_{CE} = 10V, V_{GE} = 0$<br>$f = 1MHz$ |
| Switching time                          | $t_r$         | —   | 150 | —   | ns   | $I_C = 15A$                              |
|                                         | $t_{on}$      | —   | 220 | —   | ns   | $R_L = 20 \Omega$                        |
|                                         | $t_f$         | —   | 300 | 600 | ns   | $V_{GS} = \pm 15V$                       |
|                                         | $t_{off}$     | —   | 410 | 820 | ns   | $R_g = 50 \Omega$                        |

## Main Characteristics

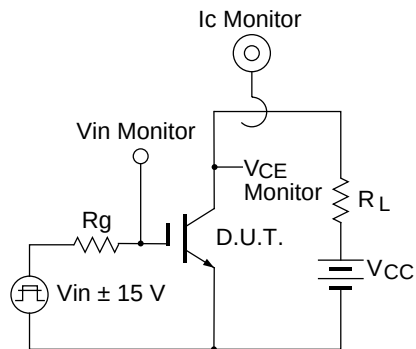




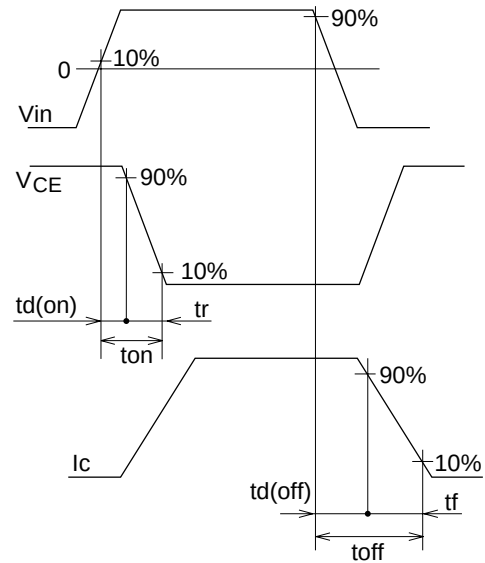




Switching Time Test Circuit

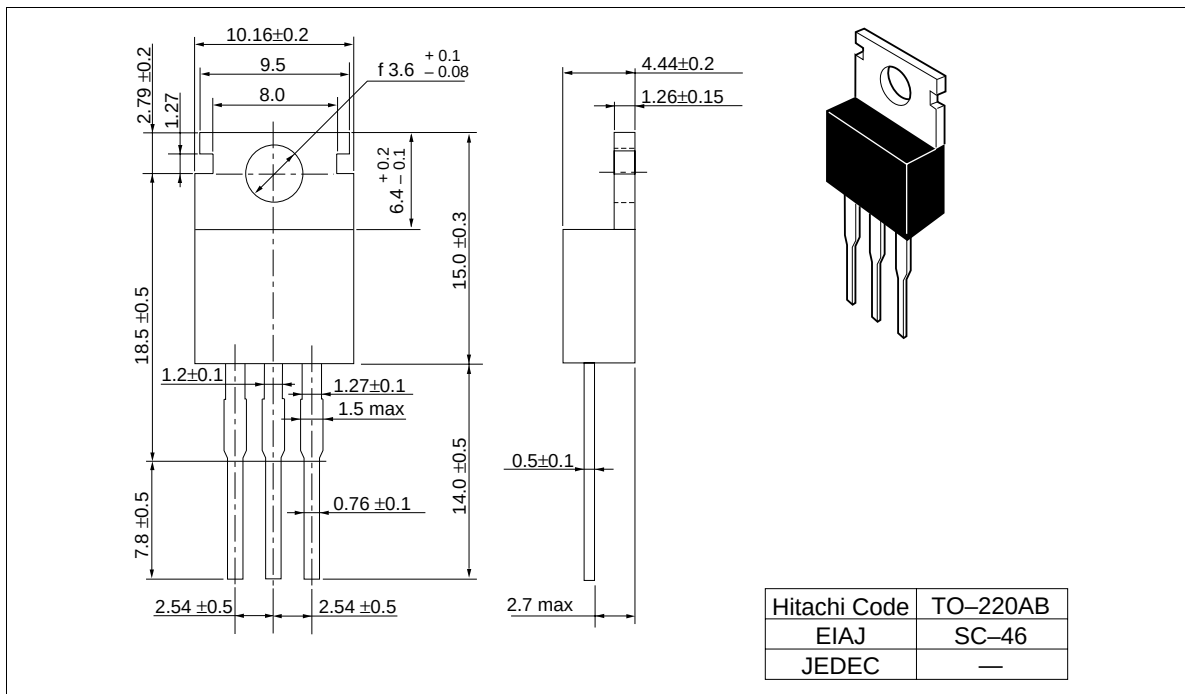


Waveform



## Package Dimensions

Unit: mm



## Cautions

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